

What is claimed is:

1. A communications control method utilized in a communications system in which a first communications terminal T1, a second communications terminal T2, and a relaying terminal that relays communications by the two terminals are connected via a network, the communications control method including:

a first determination step, prior to the first communications terminal T1 and the second communications terminal T2 carrying out communications via the relaying terminal, of the first communications terminal T1 determining first communications identification information S1 for identifying intercommunications between its terminal and the relaying terminal;

a second determination step, prior to the first communications terminal T1 and the second communications terminal T2 carrying out communications via the relaying terminal, of the relaying terminal determining second communications identification information S2 for identifying intercommunications between its terminal and the first communications terminal T1;

a third determination step, prior to the first communications terminal T1 and the second communications terminal T2 carrying out communications via the relaying terminal, of the relaying terminal determining third communications identification information S3 for identifying

intercommunications between its terminal and the second communications terminal T2;

a fourth determination step, prior to the first communications terminal T1 and the second communications terminal T2 carrying out communications via the relaying terminal, of the second communications terminal T2 determining fourth communications identification information S4 for identifying intercommunications between its terminal and the relaying terminal;

a first communications step of the first communications terminal T1 and the relaying terminal carrying out transmission and reception of first data containing the first communications identification information S1 and the second communications identification information S2;

a second communications step of the second communications terminal T2 and the relaying terminal carrying out transmission and reception of second data containing the third communications identification information S3 and the fourth communications identification information S4;

a first relaying step, when the relaying terminal is to transmit to the second communications terminal T2 first data received from the first communications terminal T1, of rewriting within said first data the first communications identification information S1 and the second communications identification information S2 as the third communications identification

information S3 and the fourth communications identification information S4; and

5 a second relaying step, when the relaying terminal is to transmit to the first communications terminal T1 data received from the second communications terminal T2, of rewriting within said data the third communications identification information S3 and the fourth communications identification information S4 as the first communications identification information S1 and the second communications identification information S2.

10 2. A relaying method utilized by a relaying terminal that is connected via a network with a first communications terminal T1 and a second communications terminal T2, and that relays communications between the two terminals, the relaying method including:

15 a first determination step of determining second communications identification information S2 identifying a communication carried out with the first communications terminal T1 for relaying communications between the first communications terminal T1 and the second communications  
20 terminal T2;

a second determination step of determining third communications identification information S3 for identifying a communication carried out with the second communications terminal T2 for relaying communications between the first  
25 communications terminal T1 and the second communications

terminal T2;

a first communications step of carrying out with the first communications terminal T1 transmission and reception of data containing the second communications identification

5 information S2;

a second communications step of carrying out with the second communications terminal T2 transmission and reception of data containing the third communications identification information S3;

10 a first relaying step of rewriting, when data received from the first communications terminal T1 is to be transmitted to the second communications terminal T2, the second communications identification information S2 within said data as the third communications identification information S3; and

15 a second relaying step of rewriting, when data received from the second communications terminal T2 is to be transmitted to the first communications terminal T1, the third communications identification S3 within said data as the second communications identification information S2.

20 3. The relaying method set forth in claim 2, further including:

a first acquisition step of acquiring first communications identification information S1 identifying a communication that the first communications terminal T1 carries out with the  
25 relaying terminal in order to communicate with the second

communications terminal T2;

a second acquisition step of acquiring fourth communications identification information S4 identifying a communication that the second communications terminal T2  
5 carries out with the relaying terminal in order to communicate with the first communications terminal T1; wherein

said first communications step carries out with the first communications terminal T1 transmission and reception of data further containing the first communications identification  
10 information S1,

said second communications step carries out with second communications terminal T2 transmission and reception of data further containing the fourth communications identification information S4,

15 said first relaying step, when data received from the first communications terminal T1 is to be transmitted to the second communications terminal T2, rewrites within said data the first communications identification information S1 and the second communications identification information S2 as the third  
20 communications identification information S3 and the fourth communications identification information S4, and

said second relaying step, when data received from the second communications terminal T2 is to be transmitted to the first communications terminal T1, rewrites within said data the  
25 third communications identification information S3 and the

fourth communications identification information S4 as the first communications identification information S1 and the second communications identification information S2.

4. The relaying method set forth in claim 2, further including a table-preparation step of preparing a session table; wherein

within a single record the session table:

stores the first communications identification information S1 and second communications identification information S2 correlatively with a communications address for the first communications terminal T1, and

stores the third communications identification information S3 and the fourth communications identification information S4 correlatively with a communications address for the second communications terminal T2.

5. The relaying method set forth in claim 4, further including:

a termination receiving step of accepting notification that communications between the first communications terminal T1 and the second communications terminal T2 have terminated; and

a deletion step of deleting from the session table a record corresponding to communications between the first

communications terminal T1 and the second communications

terminal T2.

6. The relaying method set forth in claim 2, wherein the relaying terminal is further connected with a computer terminal connected via the network to the first communications terminal  
5 T1 and the second communications terminal T2, further including:

a communications-request receiving step of receiving from the computer terminal a report indicating that there has been a request from the first communications terminal T1 for communication with the second communications terminal T2;

10 a first notification step of reporting the second communications identification information S2 to the first communications terminal T1 via the computer terminal; and

a second notification step of reporting the third communications identification information S3 to the second  
15 communications terminal T2 via the computer terminal.

7. The relaying method set forth in claim 6, further including:

a third acquisition step of acquiring from the computer first communications identification information S1 identifying  
20 a communication that the first communications terminal T1 carries out with the relaying terminal in order to communicate with the second communications terminal T2;

a fourth acquisition step of acquiring from the computer fourth communications identification information S4  
25 identifying a communication that the second communications

terminal T2 carries out with the relaying terminal in order to communicate with the first communications terminal T1; wherein

said first communications step carries out with the first communications terminal T1 transmission and reception of data  
5 further containing the first communications identification information S1,

said second communications step carries out with second communications terminal T2 transmission and reception of data further containing the fourth communications identification  
10 information S4,

said first relaying step, when data received from the first communications terminal T1 is to be transmitted to the second communications terminal T2, rewrites within said data the first communications identification information S1 and the second  
15 communications identification information S2 as the third communications identification information S3 and the fourth communications identification information S4, and

said second relaying step, when data received from the second communications terminal T2 is to be transmitted to the  
20 first communications terminal T1, rewrites within said data the third communications identification information S3 and the fourth communications identification information S4 as the first communications identification information S1 and the second communications identification information S2.

25 8. The relaying method set forth in claim 6, further



including:

an alive-confirmation step of transmitting to and receiving from the computer terminal at fixed time intervals TM1 alive information signifying one's terminal is alive; and

5 a suspend step of suspending relaying of communications between the first communications terminal T1 and the second communications terminal T2 if the alive information has not been received from the computer terminal though a fixed time TM2 or more has elapsed.

10 9. A relaying device connected via a network with a first communications terminal T1 and a second communications terminal T2, for relaying communications between the two terminals, the relaying device comprising:

a first determination means for determining second  
15 communications identification information S2 identifying a communication carried out with the first communications terminal T1 for relaying communications between the first communications terminal T1 and the second communications terminal T2;

20 a second determination means for determining third communications identification information S3 identifying a communication carried out with the second communications terminal T2 for relaying communications between the first communications terminal T1 and the second communications  
25 terminal T2;

a first communications means for carrying out with the first communications terminal T1 transmission and reception of data containing the second communications identification information S2;

5 a second communications means for carrying out with the second communications terminal T2 transmission and reception of data containing the third communications identification information S3;

10 a first relaying means for rewriting, when data received from the first communications terminal T1 is to be transmitted to the second communications terminal T2, the second communications identification information S2 within said data as the third communications identification information S3; and

15 a second relaying means for rewriting, when data received from the second communications terminal T2 is to be transmitted to the first communications terminal T1, the third communications identification S3 within said data as the second communications identification information S2.

10. A relaying computer product utilized by a computer  
20 connected via a network with a first communications terminal T1 and a second communications terminal T2, for relaying communications between the two terminals, the relaying computer product for making the computer function as:

a first determination means for determining second  
25 communications identification information S2 identifying a

communication carried out with the first communications terminal T1 for relaying communications between the first communications terminal T1 and the second communications terminal T2;

5           a second determination means for determining third communications identification information S3 identifying a communication carried out with the second communications terminal T2 for relaying communications between the first communications terminal T1 and the second communications  
10 terminal T2;

          a first communications means for carrying out with the first communications terminal T1 transmission and reception of data containing the second communications identification information S2;

15           a second communications means for carrying out with the second communications terminal T2 transmission and reception of data containing the third communications identification information S3;

          a first relaying means for rewriting, when data received  
20 from the first communications terminal T1 is to be transmitted to the second communications terminal T2, the second communications identification information S2 within said data as the third communications identification information S3; and

          a second relaying means for rewriting, when data received  
25 from the second communications terminal T2 is to be transmitted

to the first communications terminal T1, the third communications identification S3 within said data as the second communications identification information S2.

11. A computer-readable recording medium on which is recorded a relaying program utilized by a relaying terminal that is connected via a network with a first communications terminal T1 and a second communications terminal T2, and that relays communications between the two terminals, the computer-readable recording medium on which is recorded a relaying program for executing:

a first determination step of determining second communications identification information S2 identifying a communication carried out with the first communications terminal T1 for relaying communications between the first communications terminal T1 and the second communications terminal T2;

a second determination step of determining third communications identification information S3 for identifying a communication carried out with the second communications terminal T2 for relaying communications by the first communications terminal T1 and the second communications terminal T2;

a first communications step of carrying out with the first communications terminal T1 transmission and reception of data containing the second communications identification

information S2;

a second communications step of carrying out with the second communications terminal T2 transmission and reception of data containing the third communications identification

5 information S3;

a first relaying step of rewriting, when data received from the first communications terminal T1 is to be transmitted to the second communications terminal T2, the second communications identification information S2 within said data as the third

10 communications identification information S3; and

a second relaying step of rewriting, when data received from the second communications terminal T2 is to be transmitted to the first communications terminal T1, the third communications identification S3 within said data as the second

15 communications identification information S2.

12. A communications control method utilized by a computer connected via a network to a first communications terminal T1, a second communications terminal T2 and a relaying terminal that relays communications between the two terminals, the

20 communications control method including:

a communication-request acceptance step of accepting from the first communications terminal T1 a request for communication with the second communications terminal T2;

a request notification step of notifying the second

25 communications terminal T2 of the communication request;

a first reporting step of receiving from the first communications terminal T1 and reporting to the relaying terminal first communications identification information S1 identifying a communication that the first communications  
5 terminal T1 carries out with the relaying terminal;

a second reporting step of notifying the relaying terminal of the communications request, and receiving from the relaying terminal and reporting to the first communications terminal T1 second communications identification information S2 for  
10 identifying a communication that the relaying terminal carries out with the first communications terminal T1;

a third reporting step of notifying the relaying terminal of the communications request, and receiving from the relaying terminal and reporting to the second communications terminal T2  
15 third communications identification information S3 for identifying a communication that the relaying terminal carries out with the second communications terminal T2; and

a fourth reporting step of receiving from the second communications terminal T2 and reporting to the relaying  
20 terminal fourth communications identification information S4 identifying a communication that the second communications terminal T2 carries out with the relaying terminal.

13. The communications control method set forth in claim 12, further including a table-preparation step of preparing a session table; wherein

within a single record the session table:

5           stores the first communications identification information S1 and second communications identification information S2 correlatively with a communications address for the first communications terminal T1, and

10           stores the third communications identification information S3 and the fourth communications identification information S4 correlatively with a communications address for the second communications terminal T2.

14. The communications control method set forth in claim 15 13, further including

a termination receiving step of accepting notification that communications between the first communications terminal T1 and the second communications terminal Second communications terminal T2 have terminated; and

20           a deletion step of deleting from the session table records corresponding to communications between the first communications terminal T1 and the second communications terminal T2.

15. The communications control method set forth in claim 12, further including:

an alive-recognition step of transmitting to and receiving from the computer terminal at fixed time intervals TM1 alive  
5 information signifying one's terminal is alive;

a termination reporting step of transmitting a communications termination notice to the first communications terminal T1, the second communications terminal T2, and the relaying terminal if the alive information has not been received  
10 from the computer terminal though a fixed time TM2 or more has elapsed; and

cut-off step after transmission of the communications termination notice, of breaking the connection with the first communications terminal T1, the second communications terminal  
15 T2, and the relaying terminal.

16. A communications control device connected via a network to a first communications terminal T1, a second communications terminal T2, and a relaying terminal that relays communications between the two terminals, the communications control device  
20 comprising:

a communication-request acceptance means for accepting from the first communications terminal T1 a request for communication with the second communications terminal T2;

a request notification means for notifying the second  
25 communications terminal T2 of the communication request;



a first reporting means for receiving from the first communications terminal T1 and reporting to the relaying terminal first communications identification information S1 identifying a communication that the first communications terminal T1 carries out with the relaying terminal;

a second reporting means for notifying the relaying terminal of the communications request, and receiving from the relaying terminal and reporting to the first communications terminal T1 second communications identification information S2 for identifying a communication that the relaying terminal carries out with the first communications terminal T1;

a third reporting means for notifying the relaying terminal of the communications request, and receiving from the relaying terminal and reporting to the second communications terminal T2 third communications identification information S3 for identifying a communication that the relaying terminal carries out with the second communications terminal T2; and

a fourth reporting means for receiving from the second communications terminal T2 and reporting to the relaying terminal fourth communications identification information S4 identifying a communication that the second communications terminal T2 carries out with the relaying terminal.

17. A communications control computer product utilized by a computer connected via a network to a first communications terminal T1, a second communications terminal T2, and a relaying

terminal that relays communications between the two terminals,  
the communications control computer product for making the  
computer function as:

a communication-request acceptance means for accepting  
5 from the first communications terminal T1 a request for  
communication with the second communications terminal T2;

a request notification means for notifying the second  
communications terminal T2 of the communication request;

a first reporting means for receiving from the first  
10 communications terminal T1 and reporting to the relaying  
terminal first communications identification information S1  
identifying a communication that the first communications  
terminal T1 carries out with the relaying terminal;

a second reporting means for notifying the relaying  
15 terminal of the communications request, and receiving from the  
relaying terminal and reporting to the first communications  
terminal T1 second communications identification information S2  
for identifying a communication that the relaying terminal  
carries out with the first communications terminal T1;

a third reporting means for notifying the relaying terminal  
20 of the communications request, and receiving from the relaying  
terminal and reporting to the second communications terminal T2  
third communications identification information S3 for  
identifying a communication that the relaying terminal carries  
25 out with the second communications terminal T2; and

a fourth reporting means for receiving from the second communications terminal T2 and reporting to the relaying terminal fourth communications identification information S4 identifying a communication that the second communications terminal T2 carries out with the relaying terminal.

18. A computer-readable recording medium on which is recorded a communications control program utilized by a computer connected via a network to a first communications terminal T1, a second communications terminal T2, and a relaying terminal that relays communications between the two terminals, the computer-readable recording medium on which is recorded a communications control program for executing:

a communication-request acceptance step of accepting from the first communications terminal T1 a request for communication with the second communications terminal T2;

a request notification step of notifying the second communications terminal T2 of the communication request;

a first reporting step of receiving from the first communications terminal T1 and reporting to the relaying terminal first communications identification information S1 identifying a communication that the first communications terminal T1 carries out with the relaying terminal;

a second reporting step of notifying the relaying terminal of the communications request, and receiving from the relaying terminal and reporting to the first communications terminal T1

second communications identification information S2 for identifying a communication that the relaying terminal carries out with the first communications terminal T1;

5 a third reporting step of notifying the relaying terminal of the communications request, and receiving from the relaying terminal and reporting to the second communications terminal T2 third communications identification information S3 for identifying a communication that the relaying terminal carries out with the second communications terminal T2; and

10 a fourth reporting step of receiving from the second communications terminal T2 and reporting to the relaying terminal fourth communications identification information S4 identifying a communication that the second communications terminal T2 carries out with the relaying terminal.

15 19. A communications control method utilized by a first communications terminal T1 connectable via a network with a second communications terminal T2, the communications control method including:

20 a reporting step of reporting to the second communications terminal T2 first communications identification information S1 identifying communications between the second communications terminal T2 and the first communications terminal T1;

a receiving step of receiving from the second communications terminal T2 second communications identification information S2 that the second communications

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terminal T2 uses for identifying communication with the first communications terminal T1; and

a communications step of communicating with the second communications terminal T2 by carrying out transmission and  
5 reception of data containing the first communications identification information S1 and second communications identification information S2.

20. A first communications terminal T1 connectable via a network with a second communications terminal T2, the first  
10 communications terminal comprising:

a reporting means for reporting to the second communications terminal T2 first communications identification information S1 identifying communications between the second communications terminal T2 and the first communications  
15 terminal T1;

a receiving means for receiving from the second communications terminal T2 second communications identification information S2 that the second communications terminal T2 uses for identifying communication with the first  
20 communications terminal T1; and

a communications means for communicating with the second communications terminal T2 by carrying out transmission and reception of data containing the first communications identification information S1 and second communications  
25 identification information S2.

21. A communications control *computer product* making a computer function as a first communications terminal T1 connectable via a network with a second communications terminal T2, the communications control *computer product* further for  
5 making the computer function as:

a reporting means for reporting to the second communications terminal T2 first communications identification information S1 identifying communications between the second communications terminal T2 and the first communications  
10 terminal T1;

a receiving means for receiving from the second communications terminal T2 second communications identification information S2 that the second communications terminal T2 uses for identifying communication with the first  
15 communications terminal T1; and

a communications means for communicating with the second communications terminal T2 by carrying out transmission and reception of data containing the first communications identification information S1 and second communications  
20 identification information S2.

22. A computer-readable recording medium on which is recorded a communications control program for executing a communications control method utilized by a first communications terminal T1 connectable via a network with a  
25 second communications terminal T2, the computer-readable

recording medium on which is recorded a communications control program for executing:

a reporting step of reporting to the second communications terminal T2 first communications identification information S1  
5 identifying communications between the second communications terminal T2 and the first communications terminal T1;

a receiving step of receiving from the second communications terminal T2 second communications identification information S2 that the second communications  
10 terminal T2 uses for identifying communication with the first communications terminal T1; and

a communications step of communicating with the second communications terminal T2 by carrying out transmission and reception of data containing the first communications  
15 identification information S1 and second communications identification information S2.

23. A communications method for when, via a secure host defending against wrongful access from without, internal terminal devices connected to a network on the inside of the  
20 secure host and external terminal devices connected to a network on the outside carry out voice communications, the communications method characterized by:

accepting by way of the secure host, from outside the secure host, a call request from an external terminal device to a  
25 connectable internal terminal device, or accepting by way of the

secure host, from inside the secure host, a call request from an internal terminal device to a connectable external terminal device;

when a call between the external terminal device and the internal terminal device is established, reporting to the two terminal devices a path readied in advance for transmitting and receiving voice data, and communications identification information for distinguishing what is voice data between the terminal devices, and meanwhile storing terminal-device information identifying the two terminal devices, correlatively with the communications identification information reported to the two terminal devices;

when the secure host has received form the external terminal device or the internal terminal device voice data containing the communications identification information, specifying, from the terminal-device information stored correlatively with the communications identification information, a communications-destination terminal device for the voice data, and sending out received voice data to the specified terminal device 1.